



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/987,793	11/16/2001	Paul Kleinberger	01/22875	7703

7590 04/23/2002

ANTHONY CASTORINA
G.E. EHRLICH (1995) LTD.
SUITE 207
2001 JEFFERSON DAVIS HIGHWAY
ARLINGTON, VA 22202

EXAMINER

CHANG, AUDREY Y

ART UNIT	PAPER NUMBER
----------	--------------

2872

DATE MAILED: 04/23/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/987,793

Applicant(s)

KLEINBERGER ET AL.

Examiner

Audrey Y. Chang

Art Unit

2872

-- *Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --*
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3 6) ☐ Other: ____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. **Claims 14-15 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.**

The specification fails to teach that by using one optical layer with “multiple switchable light rotation elements” (as in claim 14) it is capable of selectively blocking or passing the image light to the appropriate eye. Claim 15 inherits the rejection from its based claim.

3. **Claim 21 is rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.**

The specification fails to teach *an* optical layer having subareas of opaque or transparent.

4. **Claims 1-6, 7-13, 14-15, 16-20 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01.**

The omitted structural cooperative relationships are: between the shutter layer, the first and second light polarizing sublayers, and the sublayer of first and second switchable light rotating means. It is not clear how do these elements relate to each other to provide an operable device. Clarifications are certainly required.

Art Unit: 2872

5. **Claims 1-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

The term “substantially” recited in the various claims is indefinite since it is not clear to what degree exactly should the term “substantially” be interpreted. Clarifications are required.

The phrase “light rotating means” recited in various claims is indefinite since it is not clear what is being rotated here. Clarifications are required.

The phrase “a first and second polarizing sublayers and a sublayer of multiple on and off switchable light rotating means” recited in claim 17 is indefinite and confusing since it is not clear how do these elements relate to the elements already mentioned in its based claim 16. Claims 19 and 20 inherit the rejection from their based claim.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. **Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by the patent issued to Isono et al (PN. 5,315,377).**

Isono et al teaches a *three-dimensional image display device* that is comprised of a *liquid crystal panel* (46), serves as the *display*, for displaying right eye and left eye images in an alternative fashion within a frame and a *liquid crystal panel* (28) for generating *parallax barrier*, that serves as the *shutter layer*, having alternative first and second *subareas* that are operated to be opaque (first phase of

Art Unit: 2872

operation) and transparent (second phase of operation) such that the right eye image and left eye image would be directed to right eye and left eye *respectively* to enable stereoscopic image display, (please see Figure 1, column 4). Isono et al teaches that the image display device also comprises a computer (20), drivers and controller means for synchronizing the display of the image and the generation of the parallax barrier, (please see Figure 1 and columns 5-6). **This reference has therefore anticipated the claim.**

8. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by the patent issued to Morishima et al (PN. 5,875,055).

Morishima et al teaches a *stereoscopic image display apparatus* that is comprised of a *liquid crystal display* (1) for displaying a *frame having first and second subregions for alternatively presenting left eye image and right eye image*, a *polarizer* within the liquid crystal display for predeterminedly polarize the image light from the display, a *phase shifter member* (30) and a *polarization optical element* (2), that together serve as the *shutter means* for allowing the right image light and left image light to reach observer's right eye and left respectively, (please see Figure 1 and column 5). Morishima et al teaches that the apparatus further comprises an *image processing means* (3) that serves as the *coordinating element* that controls the synchronization between the display of the image on the display and the switching of the phase shift member (3), therefore the shutter means, to enable the stereoscopic display.

With regard to claim 2, Morishima et al teaches that the phase shifter member is a π -cell and is comprised of a plurality of *on and off switchable phase shifting regions* such that the polarization state of the light would be rotated or not rotated in OFF or ON state in the manner as demonstrated in Figures 3B and 3A. With regard to claim 3, Morishima et al teaches that the each region of the phase shifter member or π -cell could be *independently controlled* by the π -cell drive circuit (31) as demonstrated in Figure 5, where it serves as the *multi-line controlling switching means*, (please see column 10, lines 54-60).

This reference has therefore anticipated the claims.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. **Claims 5, 7, 13, 16-17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Morishima et al.**

The stereoscopic image display apparatus taught by Morishima et al, having a polarizer in the LCD display and a polarization optical element, served as the first and second light polarizing sublayers, and a phase shift member having multiple on and off switchable polarization rotating regions as shutter means, (with details described for claims 1-3), has met all the limitations of the claims.

With regard to claims 5, 13 and 19, this reference does not teach explicitly that there are additional layers of shutter however such modification is considered to be obvious matter of design choice to one skilled in the art for the purpose of changing the design for the shutter means.

With regard to claims 7 and 16-17, this reference teaches that the phase shifter π -cell is controlled in a multi-line controlling switching fashion using a π -cell drive circuit but it does not teach explicitly to use a computing means to utilize the drive circuit. However this feature is either inherently met by the disclosure since the drive circuit performs the cited function in the claims or an obvious modification to one skilled in the art for the benefit of using a computing means to more accurately control the drive circuit.

11. **Claims 6, 14-15 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Morishima et al in view of the patent issued to Isono et al.**

Art Unit: 2872

The stereoscopic image display apparatus taught by Morishima et al, having a polarizer in the LCD display and a polarization optical element, served as the first and second light polarizing sublayers, and a phase shift member having multiple on and off switchable polarization rotating regions as shutter means, (with details described for claims 1-3), has met all the limitations of the claims.

With regard to claims 6, 14-15 and 21, this reference does not teach explicitly to use means for sensing the position of the viewer. Isono et al teaches to use a *head position-detecting unit* (8, Figure 1) to detect the head or eye position of the observer wherein the detected information is fed in a computer for changing the generation of the shutter means. It would then have been obvious to one skilled in the art to apply the teachings of Isono et al to use a head position detecting unit and a computer means to calculate the shift of the position of the observer to adjust the generation of the shutter means for the benefit of providing a stereoscopic image display that accommodates the change of the position of the observer.

12. Claims 8-12 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Morishima et al as applied to claims 7 and 16 above, and further in view of the patent issued to Isono et al.

The stereoscopic image display apparatus taught by Morishima et al, having a polarizer in the LCD display and a polarization optical element, served as the first and second light polarizing sublayers, and a phase shift member having multiple on and off switchable polarization rotating regions as shutter means, (with details described for claims 1-3, 7 and 16), has met all the limitations of the claims.

The features concerning the eye-locating unit and the computing element are rejected based on the teachings of Isono et al for the same reasons stated for claims 6, 14-15 and 21 above.

Art Unit: 2872

13. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Morishima et al in view of the patent issued to Imai (PN. 5,825,541).

The stereoscopic image display apparatus taught by Morishima et al, having a polarizer in the LCD display and a polarization optical element, served as the first and second light polarizing sublayers, and a phase shift member having multiple on and off switchable polarization rotating regions as shutter means, (with details described for claims 1-3), has met all the limitations of the claims.

With regard to claim 4, this reference however does not teach explicitly to use a mechanical means to translate the shutter means. Imai in the same field of endeavor teaches a stereoscopic display system wherein the shutter means may be shifted laterally by a shifter (6, Figures 3A and 3B) to allow the left eye and right eye image to reach the left and right eye respectively. It would then have been obvious to one skilled in the art to apply the teachings of Imai to modify the apparatus of Morishima et al for the benefit of providing an alternative means to enable stereoscopic image display.

14. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Morishima et al as applied to claim 16 above, and further in view of the patent issued to Imai.

The stereoscopic image display apparatus taught by Morishima et al, having a polarizer in the LCD display and a polarization optical element, served as the first and second light polarizing sublayers, and a phase shift member having multiple on and off switchable polarization rotating regions as shutter means, (with details described for claims 1-3 and 16), has met all the limitations of the claims.

With regard to claim 8, this reference however does not teach explicitly to use a mechanical means to translate the shutter means. Imai in the same field of endeavor teaches a stereoscopic display system wherein the shutter means may be shifted laterally by a shifter (6, Figures 3A and 3B) to allow the left eye and right eye image to reach the left and right eye respectively. It would then have been obvious

Art Unit: 2872

to one skilled in the art to apply the teachings of Imai to modify the apparatus of Morishima et al for the benefit of providing an alternative means to enable stereoscopic image display.

Double Patenting

15. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

16. Claims 1-3, and 5-6 are rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 6, and 12-14 of prior U.S. Patent No. 6,252,707. This is a double patenting rejection.

17. Claims 1-6 are rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 4, 6-7 and 9-10 of prior U.S. Patent No. 5,822,117. This is a double patenting rejection.

18. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

19. Claims 7-11, 14-15, 16- 20 and 21 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 6, 9, 11 and 12 of U.S. Patent

Art Unit: 2872

No. 6,252,707. Although the conflicting claims are not identical, they are not patentably distinct from each other because they each disclose a stereoscopic image display using first and second polarizing sublayers and a layer of on and off switchable light rotating means as the shutter means.

20. **Claims 7-11, 14-15, 16-20 and 21 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 4, 6 and 10 of U.S. Patent No. 5,822,117.** Although the conflicting claims are not identical, they are not patentably distinct from each other because they each disclose a stereoscopic image display using first and second polarizing sublayers and a layer of on and off switchable light rotating means as the shutter means.

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Audrey Y. Chang whose telephone number is 703-305-6208. The examiner can normally be reached on Monday-Friday (8:00-4:30), alternative Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cassandra Spyrou can be reached on 703-308-1637. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Audrey Y. Chang
Primary Examiner
Art Unit 2872

A. Chang, Ph.D.
April 18, 2002

